

CLAIMS

1) A method for determining gas hydrate formation conditions in a well fluid, comprising the following stages :

- taking a fluid sample,

5 - placing this sample in a calorimetry cell,

- performing on this sample a reference thermogram in a temperature range between T1 and T2,

- performing on the same sample a second thermogram in the same range and under a pressure P_h of a hydrocarbon gas, T_1 being a temperature low enough to obtain the

10 formation of hydrates in the sample at a gas pressure P_h , P_2 being high enough to obtain
hydrate dissociation.

- identifying a peak in the second thermogram corresponding to the hydrates dissociation zone and deducing therefrom a hydrates dissociation temperature

- determining the hydrate formation conditions for the fluid considered

15 2) A method as claimed in claim 1, wherein pressure Ph is determined as a function
of the pressure of the well fluid close to the zones where the appearance of hydrates is
critical.

3) A method as claimed in any one of the previous claims, wherein the efficiency of an anti-hydrate additive is tested by adding it to said fluid sample in determined proportions.

4) A method as claimed in any one of the previous claims, wherein T1 and T2 are –20°C and 35°C respectively.

5) A method as claimed in any one of the previous claims, wherein the thermograms are obtained with a temperature gradient ranging between 0.5 and

5 5°C/minute, preferably at 2°C/minute.

6) A method as claimed in any one of the previous claims, wherein CH₄ is used for said gas.

7) A system for implementing the method as claimed in any one of the previous claims, characterized in that it comprises in combination : a calorimetric measuring

10 device, means for placing the measuring cell of said device under pressure by means of a hydrocarbon gas, thermogram recording means.